REMARKS

Claims 1-20 and 22-36 are currently pending. Claims 37-73 were earlier withdrawn from consideration pursuant to an election requirement and claim 21 was cancelled without prejudice or disclaimer to the subject matter recited therein. Claims 1-20 and 22-36 have been rejected. Applicants respectfully request reconsideration of the outstanding rejections based upon the following remarks.

Claims 1, 2, 6-9, 17-20, and 22-26 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Furuki. Applicants respectfully traverse this rejection.

Furuki relates to a gas detector having an organic film in which an organic dye has been originally incorporated. The gas to be detected is adsorbed and an electronic interaction occurs with the dye molecule. The disclosure of Furuki regarding the interaction between the gas molecules and the dye is directed to a purely electronic interaction ("Furthermore, the gas sensitive thin film should be desirably such that gas molecules adsorbed cause an electronic interaction with the dye molecules in the thin film, and the intensity of fluorescence or phosphorescence changes reversibly." column 5, lines 25-29). Furuki is wholly lacking in any disclosure of a chemical interaction between the gas molecules and the organic dye.

According to Furuki, the organic dye produces a fluorescence or phosphorescence whether or not the gas to be detected is present. When the gas to be detected is present, the intensity of the fluorescence or phosphorescence changes due to electronic interaction, and it is this change in intensity that is measured to provide the property of the gas to be detected. See; e.g., column 5, lines 39-40 ("When an oxidizing or reducing gas is adsorbed on an organic dye, a strong electronic interaction acts between the gas molecules adsorbed and the dye molecules, and a noticeable change in fluorescence or phosphorescence, for instance, is observed. In addition, there are cases where an obverse change in the fluorescence or phosphorescence is observed depending on the difference of the property and kind of the gas adsorbed").

The organic dye in Furuki is originally present as a fluorescent or phosphorescent material, rather than coming into existence as an interaction product. Furuki discloses that an amount of a chemical species is detected by measuring the reduction in fluorescence or phosphorescence of the organic dye that has always been present in the thin film. This is disclosed in column 9, lines 36–49: "On the basis of the foregoing relations, if the relationship between the concentration of the gas to be detected and changes of fluorescence or phosphorescence . . . and the ratio between the intensity of fluorescence or phosphorescence from the gas sensitive thin film at the time of contact with the gas to be detected and the intensity of fluorescence or phosphorescence from the gas sensitive thin film at the time of noncontact with the gas sensitive thin film is calculated by the signal processing means, it is possible to simply output the concentration of the gas to be detected quantitatively without requiring complicated correction." (Emphasis added.)

In contradistinction, each of claims 1, 2, 6-9, 17-20 and 22-26 is directed to the presence of at least one reagent capable of undergoing a chemical interaction with the chemical species to be detected to form an optically detectable interaction product. The claimed interaction product is generated based on a chemical interaction between a reagent present in the coating of the opto-acoustic wave sensor and the chemical species to be detected. Thus, the recited optically detectable interaction product is one formed through a chemical interaction, and not an electronic interaction. It is the product of this chemical interaction that modifies the incoming EM radiation by either absorbing EM radiation from the EM radiation source or emitting a different radiation.

Furuki fails to teach or suggest "at least one reagent that is capable of undergoing a selective chemical interaction with said chemical species to be detected to yield at least one optically detectable interaction product" as recited in claim 1. Therefore, Furuki does not disclose each and every limitation of each of claims 1, 2, 6-9, 17-20, and 22-26 and thus does not anticipate these claims.

Claims 5, 10-16, and 31-36 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Furuki in view of Ebersole. Applicants respectfully traverse the rejection.

The arguments provided above with regard to the § 102 rejection are equally pertinent to this rejection. Specifically, Furuki does not teach or suggest "at least one

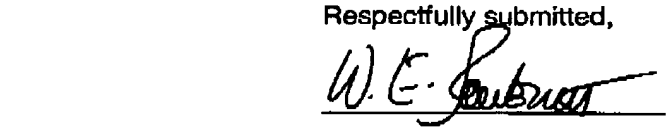
reagent that is capable of undergoing a selective chemical interaction with said chemical species to be detected to yield at least one optically detectable interaction product" as recited in claims 1 (from which claims 5, 10-16, and 31-35 depend) and 36. Instead, Furuki relates to the measurement of a change in the fluorescence or phosphorescence of an organic dye by the electronic interaction between the dye that has always been in the film and the gas molecule to be detected. Ebersole is relied upon as teaching an optical acoustic wave sensor for detecting an analyte in a liquid sample, and it provides no meaningful teaching or suggestion of "at least one reagent that is capable of undergoing a selective chemical interaction with said chemical species to be detected to yield at least one optically detectable interaction product".

Claims 26-30 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Furuki in view of Ebersole and Friedman. Applicants respectfully traverse this rejection.

Claims 26-30 depend from claim 1. As pointed out above, neither Furuki nor Ebersole teaches or suggests "at least one reagent that is capable of undergoing a selective chemical interaction with said chemical species to be detected to yield at least one optically detectable interaction product" as recited in claim 1. Friedman is relied upon in the Office action as teaching the detection of halogenated hydrocarbons which react with pyridine or alkyl-substituted compounds of pyridine to yield colored products in the presence of a strong base. Friedman provides no meaningful disclosure related to "at least one reagent that is capable of undergoing a selective chemical interaction with said chemical species to be detected to yield at least one optically detectable interaction product".

In view of the above, it is submitted that the claims are patentable and in condition for allowance. Reconsideration of the rejection is requested. Allowance of claims at an early date is solicited. If the Applicants can be of any assistance in advancing this application to allowance, the Examiner is invited to call the Applicants' attorney whose telephone number is indicated below.

Respectfully submitted,



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